1. (Amended) A semiconductor product comprising:

a low-k dielectric layer;

a nitrogen base layer formed of nitrogen-doped silicon carbide and including N-H base groups capable of diffusing therefrom; and

an oxygen-containing layer interposed directly between said low-k dielectric layer and said nitrogen base layer.

2. The semiconductor product as in claim 1, wherein said oxygen-containing layer comprises a TEOS (tetraethyl orthosilicate) oxide film.

4. (Amended) The semiconductor product as in claim 1, wherein said nitrogen base layer comprises one of a barrier layer film, an etch-stop layer, and a hardmask film.

5. The semiconductor product as in claim 1, wherein said oxygen-containing layer comprises oxygen-doped silicon carbide.

6. (Amended) The semiconductor product as in claim 1, wherein said nitrogen base layer comprises a surface of a further film.

7. The semiconductor product as in claim 1, in which said semiconductor product includes:

a lower low-k dielectric layer disposed over a barrier layer;

an etch-stop layer disposed over said lower low-k dielectric layer;

an upper low-k dielectric layer disposed over said etch-stop layer;

a hardmask layer disposed over said upper low-k dielectric layer;

said nitrogen base layer comprising one of said barrier layer and said etch-stop layer; and

said oxygen-containing layer comprising a TEOS oxide layer interposed between said nitrogen base layer and one of said lower low-k dielectric layer and said upper low-k dielectric layer.

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8. (Amended) The semiconductor product as in claim 7, further comprising each of said barrier layer, said etch-stop layer and said hardmask layer being a nitrogen base layer, and a TEOS oxide layer interposed between each said nitrogen base layer and each said adjacent low-k dielectric layer.

9. (Amended) The semiconductor product as in claim 7, wherein said barrier layer comprises one of said nitrogen base layer formed of nitrogen-doped silicon carbide, and silicon nitride; and said etch-stop layer comprises the other of said nitrogen base layer formed of nitrogen-doped silicon carbide, and silicon nitride.

10. The semiconductor product as in claim 1, wherein said N-H base groups comprise one of amines and amino-silicates.

11. The semiconductor product as in claim 1, wherein said low-k dielectric layer includes a dielectric constant less than 3.5.

12. The semiconductor product as in claim 1, wherein said low-k dielectric layer comprises one of an organo-silicate-glass and SiOC-H.

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13. (Amended) A semiconductor product comprising:

a barrier layer formed over a substrate;

a lower low-k dielectric layer formed over said barrier layer;

an etch-stop layer formed over said lower low-k dielectric layer;

an upper low-k dielectric layer formed over said etch-stop layer;

a hardmask layer disposed over said upper low-k dielectric layer; and

a TEOS (tetraethyl orthosilicate) oxide film interposed at least one of between said lower low-k dielectric layer and said barrier layer, between said lower low-k dielectric layer and said etch-stop layer, between said etch-stop layer and said upper low-k dielectric layer, and between said upper low-k dielectric layer and said hardmask.

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at least one of said barrier layer and said etch-stop layer formed of nitrogen-doped silicon carbide.

14. The semiconductor product as in claim 13, wherein each of said barrier layer and said etch-stop layer include N-H base groups therein.

15. The semiconductor product as in claim 13, in which a two-tiered opening is formed to extend through said hardmask layer, said upper low-k dielectric layer, said etch-stop layer, said lower low-k dielectric layer, and said barrier layer.

16. The semiconductor product as in claim 15, further comprising a conductive material filling said two-tiered opening, said conductive material serving as an interconnect medium.

17. The semiconductor product as in claim 13, in which an opening is formed to extend through said hardmask layer, said upper low-k dielectric layer, said etch-stop layer and said lower low-k dielectric layer, and further comprising a DUV photoresist formed within said opening.

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26. (New) A semiconductor product comprising:

a low-k dielectric layer;

a nitrogen base layer including N-H base groups capable of diffusing therefrom; and

an oxygen-doped silicon carbide layer interposed directly between said low-k dielectric layer and said nitrogen base layer.

27. (New) The semiconductor product as in claim 26, wherein said nitrogen base layer is formed of nitrogen-doped silicon carbide.